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(19) (CA) **CANADIAN PATENT** (12)

(54) SEPTIC TANK

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ABSTRACT

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A septic tank molded of plastic, preferably of polyethylene, and including a shell unitarily forming a bottom, opposite ends, opposite sides, and a top with reinforcing corrugations in the opposite sides, opposite ends and top. The corrugations in the sides define ridges and grooves advantageously extending longitudinally upright and include predetermined pairs of internal corrugation grooves with the corrugation grooves of each pair mutually facing each other transversely of the tank. Baffles are advantageously mounted in the predetermined pairs of grooves respectively. Each baffle has opposite lateral edges of transverse outline adapted to tightly fit in the corresponding pair of grooves and has an intermediate corrugated portion whose resilience provides spring engagement in the corresponding grooves.

This invention relates to a septic tank, and more particularly, to a septic tank of the molded tank.

There have so far been proposed septic tanks of the above type which are either made of concrete or of fiberglass. The septic tank of precast concrete, although of relatively thin wall construction is relatively too heavy for convenient installation even with a backhoe and for transportation to some sites. On the other hand, fiberglass is rather expensive and also relatively heavy.

10 It is a general object of the present invention to provide a molded septic tank which substantially obviates the above-mentioned disadvantages.

It is an object of the present invention to provide a molded septic tank which is of relatively inexpensive and simple construction and easy to install even without recourse to machinery to lower it into the ground.

It is another object of the present invention to provide a septic tank of the above type which includes a molded shell of unitary construction assuring against leakage thereof.

20 It is a further object of the present invention to provide a molded septic tank which is made of a non-corrosive, chemically resistant, and moldable material.

It is still another object of the present invention to provide a molded septic tank which is reinforced by corrugations advantageously arranged to fit the baffles in the internal grooves formed by such corrugations.

30 It is a still further object of the present invention to provide a molded septic tank wherein the baffles are also advantageously made with corrugations and opposite lateral edges to tightly fit with spring biased engagement in a pair of mutually facing internal grooves defined by the corrugations.



The above and other objects and advantages of the present invention will be better understood with reference to the following detailed description of a preferred embodiment thereof which is illustrated, by way of example, in the accompanying drawings; in which:

Figure 1 is a side elevation view, partly broken away, of a molded septic tank according to the present invention;

Figure 2 is an end view of the molded septic tank of Figure 1 with part broken away;

Figure 3 is a top view of the septic with the covers thereon;

Figure 4 is a side elevation view of a cover and of a corresponding aperture portion of the same septic tank; and

Figure 5 is a perspective view of a baffle forming part of the septic tank.

The illustrated septic tank includes a shell 1 which is molded of polyethylene and integrally forms a bottom 2, opposite ends 3, opposite sides 4, and a top 5. Each of the two opposite sides includes corrugations longitudinally extending upward and laterally spaced apart longitudinally of the septic tank. Each corrugation defines an external ridge 6 with a corresponding internal groove 7 or an internal ridge 8 with a corresponding external groove 9. The corrugations on the opposite sides of the shell are transversely aligned in pairs relative of the shell. The ridges 6 and grooves 7 are rigidly connected across the top 5 of the shell by intermediate ridges 10 and grooves 11, similarly as the internal ridges 7 and grooves 9. The two corrugations of each of the above-mentioned pairs extend in a common transverse plane orthogonally to the longitudinal direction of the shell.

The opposite ends 3 of the shell are each provided with corrugations defining the ridges 12 which longitudinally extend

transversely of the shell; that is, orthogonally relative to the corrugations of the sides 4. A sewage inlet 13 is provided in one end 3 near the top 5 and a clarified liquid outlet 14 is provided in the other end 3 at a lower level than the inlet 13. The liquid outlet 14 defines the liquid level in the tank, as indicated by the dotted line 15.

An inlet baffle 16, an intermediate baffle 18 are positioned in the shell 1. Each of the baffles 16 and 18 is formed of one baffle section 19 while the baffle 17 is formed of two baffle sections 19, as the one shown in Figure 5. Each baffle section 19 or baffle 16, 17, and 18 has opposite lateral sides 20 which are of transverse outline complementary to the transverse outline of the afore-mentioned internal groove 7 to tightly fit in a corresponding pair of mutually facing internal grooves. Each baffle section 19 includes a corrugated intermediate portion 21 whose resilience produces spring engagement of the above lateral edges in the corresponding pair of mutually facing grooves 7. The relative positions and functions of the baffles 16, 17, and 18 are as already known in the already known septic tanks.

The top 5 of the shell 1 is formed with a pair of access apertures 22 at the opposite ends thereof respectively. Each aperture 22 is provided with a circular ridge 23. A cover closes each access aperture 22 and includes an annular portion 24 and a cap portion 25. The annular portion 24 is formed with a circular groove for tight engagement of the ridge 23 therein. The annular portion 24 also includes a central aperture which is closed by a cap portion 25.

Each baffle section 19 and cover portion 24 and 25 is also made of molded polysthylene.

1) A molded septic tank comprising a molded shell integrally forming a bottom, opposite ends, opposite sides, and a top, said opposite sides including corrugations laterally spaced apart from each other along the length of said shell and including pairs of corrugation grooves on the internal face of said opposite sides, the grooves of each of said pairs of corrugation grooves mutually facing each other and extending in transverse planes respectively relative to the molded shell, and baffles engaged in said pairs of grooves respectively and longitudinally separating the internal space of said shell into successive zones serially arranged in the end-to-end direction of the tank.

2) A molded septic tank as defined in claim 1, wherein each of said baffles includes opposite lateral edges of complementary transverse outline relative to said grooves and tightly fitting in the latter.

3) A molded septic tank as defined in claim 1, wherein each of said baffles includes an intermediate portion having corrugations longitudinally extending operatively upright and producing spring engagement of the corresponding opposite lateral edges into the corresponding pair of grooves.

4) A molded septic tank as defined in claim 1, wherein said opposite ends include corrugations longitudinally extending transversely relative to said corrugations of the opposite sides of the shell.

5) A molded septic tank as defined in claim 1, wherein said shell is integrally molded of polyethylene.

6) A molded septic tank as defined in claim 2, wherein each of said baffles includes an intermediate portion having corrugations

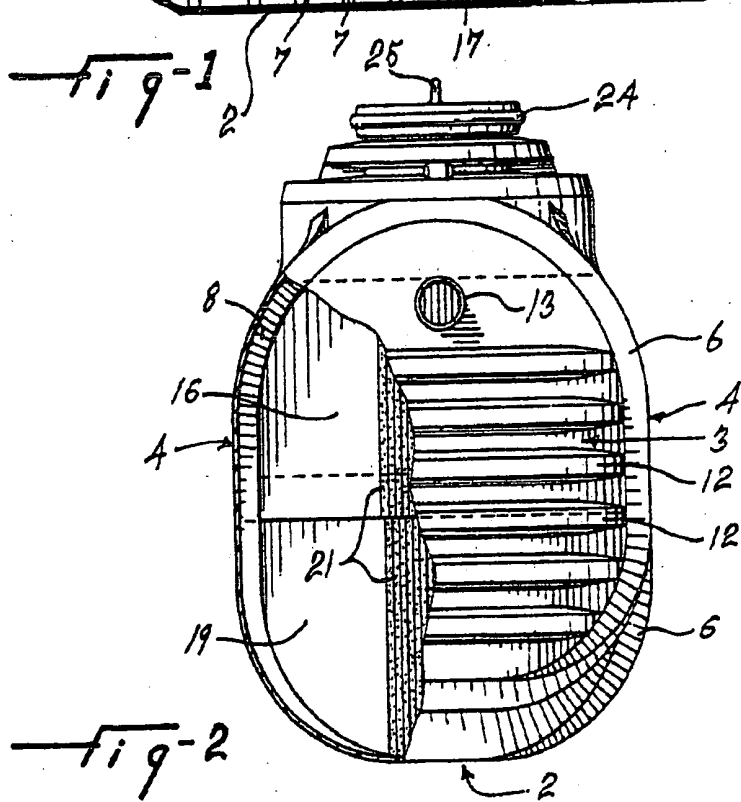
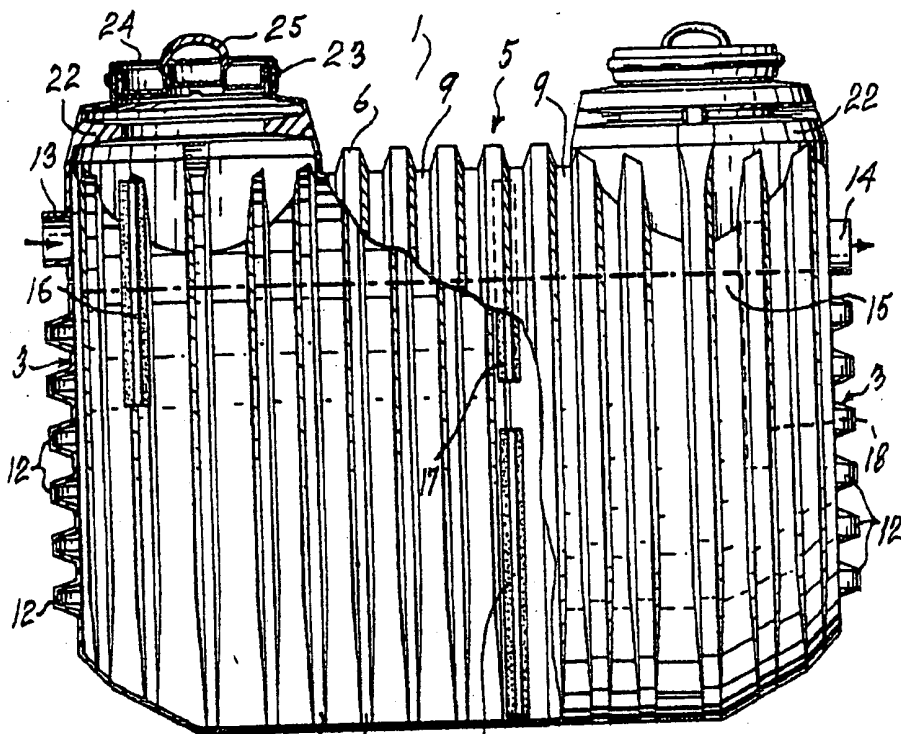
longitudinally extending operatively upright and producing spring engagement of the corresponding opposite lateral edges into the corresponding pair of grooves, said opposite ends include corrugations longitudinally extending transversely relative to said corrugations of the opposite sides of the shell, said shell is integrally molded of polyethylene, said pairs of grooves include a first and a third pairs of grooves close to said opposite ends respectively and a second pair of grooves substantially midway between said first and third pairs of grooves and said baffles include a first, a second, and a third baffles engaged in said first, second, and third pairs of grooves respectively.

7) A molded septic tank as defined in claim 6, wherein said top includes a pair of access apertures at the opposite ends thereof communicating with the opposite sides respectively of said second baffle and a cover tightly fits over each of said access apertures.

8) A molded septic tank as defined in claim 7, wherein an annular ridge extends around each of said access apertures, each of said covers includes an outer ring portion and a cap portion, said outer ring portion includes an annular groove tightly engaging the corresponding annular ridge, and said cap portion tightly closes the inner aperture defined by said ring portion.

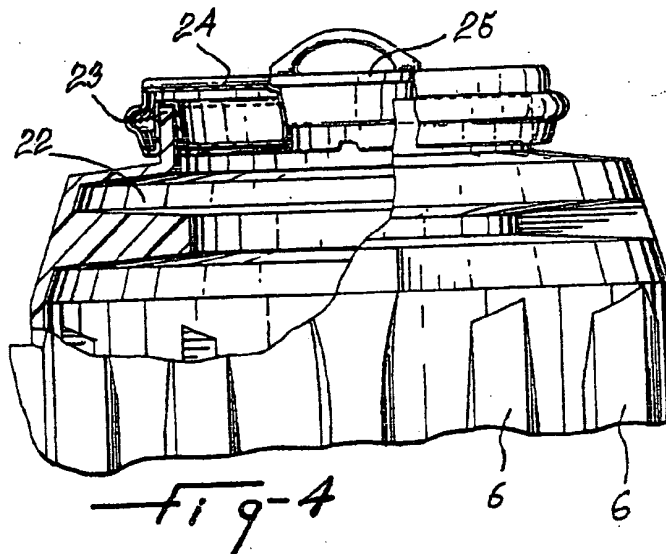
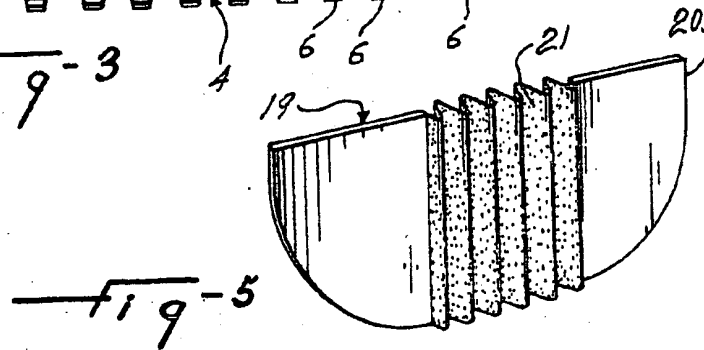
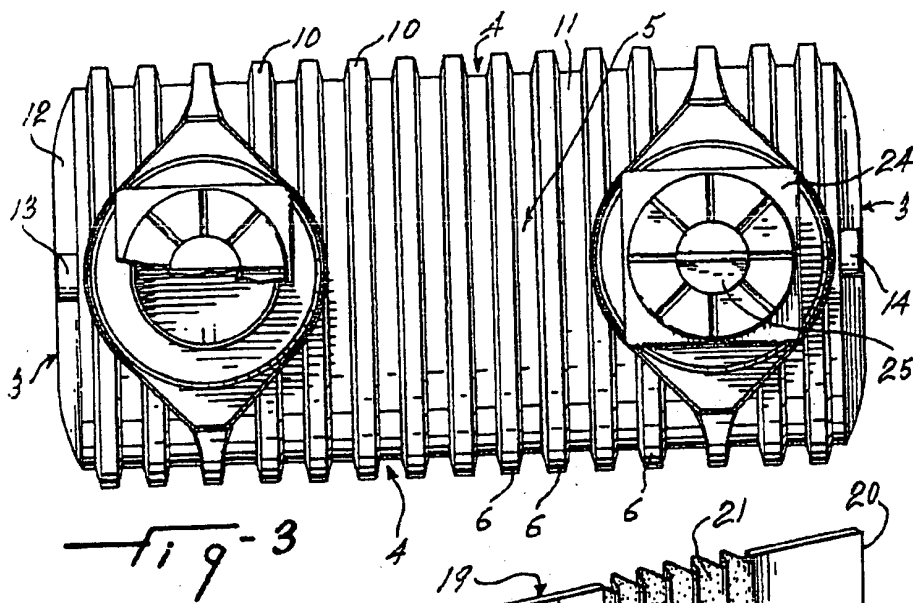
9) A molded septic tank as defined in claim 8, wherein each of said ring portions and cap portions is molded of polyethylene.





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